

C1118.00/C

CLAIMS

1. A method of evaporating a liquid sample including a volatile solvent, comprising the step of continuously removing inert gas which is rich in solvent vapour from near the surface of the liquid.

2. A method according to claim 1 in which the gas is cooled in a condenser wherein the vapour condenses, allowing the purified gas to be recirculated.

3. A method according to claim 1 ~~or claim 2~~ in which the evaporation rate is increased by imparting an orbital motion to the container holding the liquid sample, causing the latter to spin around in the form of a vortex.

CLAIM 1
4. A method according to ~~any one of claims 1 to 3~~ in which the liquid sample is contained within a chamber, and the volume of gas recirculated to the chamber is progressively reduced, thereby to assist evaporation.

provide independent from
5. Apparatus for performing the method according to ~~any one preceding claim~~ in which the liquid is held in a container, and said gas is withdrawn by *2*

Write - generally as shown in Fig. 2
6. Apparatus according to claim 5 ~~as dependent upon claim 4~~ in which the tube is connected to a refrigerated condensing device through which the permanent gas is passed by a pump for recirculation.

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7. Apparatus according to claim 5 ~~or claim 6~~ in which the container is mounted in a vortex evaporator!

9. Apparatus for effecting the evaporation of a volatile solvent, wherein an inert gas, which is held in a sealed environment connected to at least one container containing the solvent, is recirculated via a condensing or absorbing device for absorbing or extracting solvent vapour entrained in the recirculating inert gas.

10. Apparatus according to claim 9 in which the inert gas is returned directly into the upper end of the container.

11. Apparatus according to claim 10 in which the inert gas is directed into the container through nozzle means which directs the gas directly onto the surface of the solvent in the container.

12. Apparatus according to ~~any one of claims 9 to 11~~ ^{claim 12} in which a pressure control means introduces or extracts inert gas, in order to maintain a predetermined pressure in the recirculating system.

13. Apparatus according to ~~any one of claims 9 to 12~~ in which the inert gas is recirculated by means of a pump.

14. Apparatus according to ~~any one of claims 9 to 18~~ in which a gas reservoir means is provided in which inert gas is stored under pressure for reuse as required, with pressure controlling means limiting the pressure of the gas leaving the reservoir to a desired level.

15. Apparatus according to ~~any one of claims 9 to 14~~ in which the container is mounted in a vortex evaporator.

16. Apparatus according to ~~any one of claims 5 to 11~~ in which the inert gas is nitrogen.

CLAIM 5

A 17. Apparatus according to ~~any one of claims 5 to 16~~ in which a heater is provided in the recirculating system downstream of the condensing device.

11 18. Apparatus according to ~~any one of claims 9 to 15~~ in which the container is open-topped for accommodation in the sealed environment.

A 19. Apparatus according to ~~any one of claims 9 to 15~~ in which a plurality of containers are connected to a manifold through which the inert gas is recirculated.

20. Apparatus according to claim 19 in which the manifold is divided into two compartments, one being connected to a pump for extracting the mixture of the inert gas and solvent vapour and the other feeding recirculated inert gas from the condensing or absorbing device.

21. A method of, or apparatus for, evaporating a liquid sample substantially as herein described with reference to, and as shown in, Figures 2 to 4 of the accompanying drawings.